

Publishing architecture models as linked data with SMW

Erwin Oord
SMWCon Fall 2022
28 october 2022



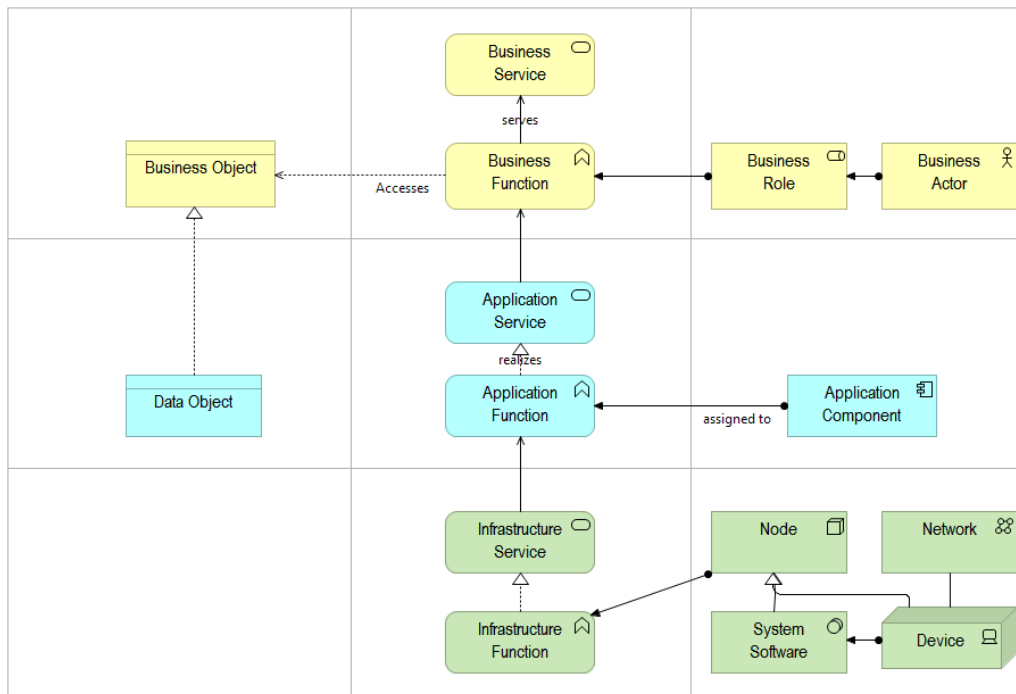
Agenda

- About enterprise architecture and the ArchiMate standard
- About architecture models and SMW
- About linked data and vocabularies
- Putting things together: ArchiMate + SMW + linked data

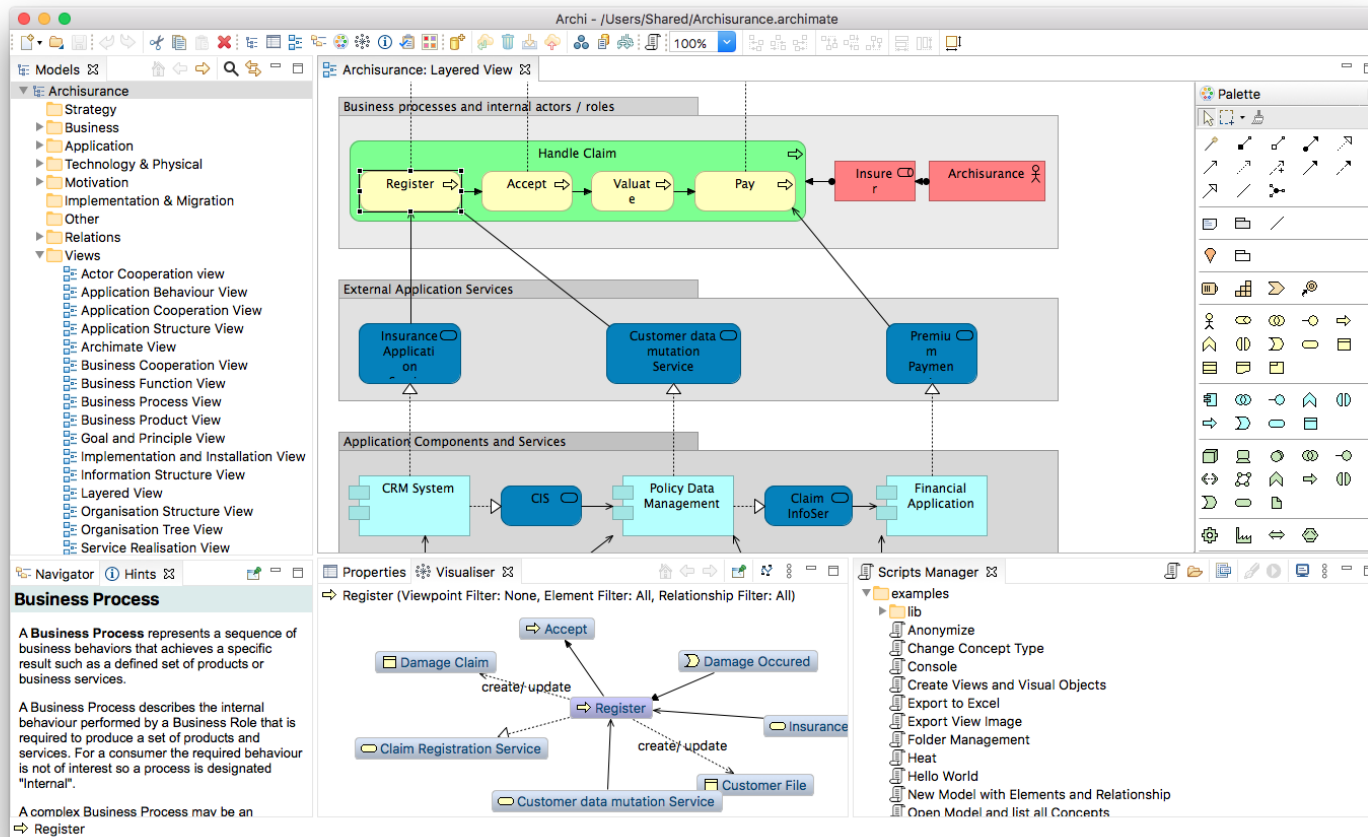
About enterprise architecture and ArchiMate

- What?
 - Methodology for describing/designing structure and cohesion in business and technology
 - Provides insight in complexity, dependencies, as-is and to-be
- Why?
 - Organisations are getting more and more complex and are increasingly dependent on other organisations
 - Information is becoming increasingly more important
 - Complexity needs to be managed proactively
- How?
 - ...

ArchiMate standard for EA modelling



Archi is an open source ArchiMate modelling tool

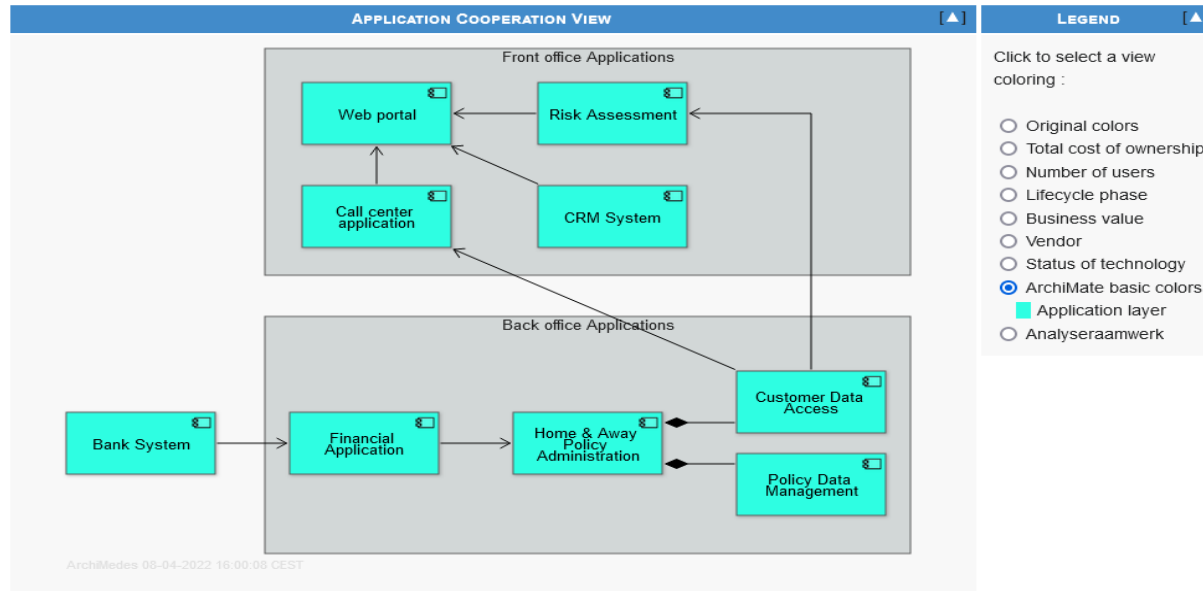


Source: <https://www.archimatetool.com>

ArchiMedes SMW extension for publishing EA models

Page [Discussion](#) [Read](#) [Edit](#) [Edit source](#) [View history](#) [Opmerkingen](#) [More](#)

[ArchiMate models](#) > [ArchiSurance V3 - 2](#) > [Views](#) > Application Cooperation View



Click [here](#) to display this view at full size.

Click [here](#) to display the technical details of this view.

Architecture
modelling tool



Open Group
exchange
format file



SMW/
ArchiMedes

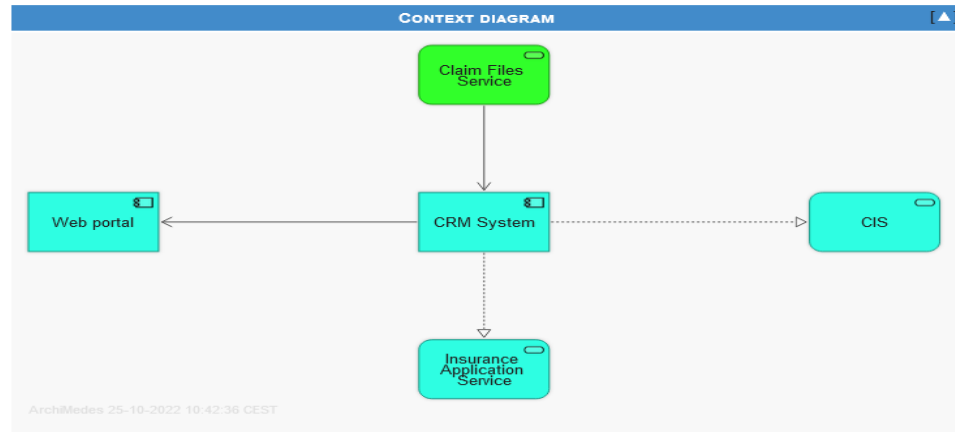
ARCHIMATE VIEW APPLICATION COOPERATION VIEW	
Element type	: ArchiMateView
Element id	: Id-f433f28d-2570-b25a-1a71-bad0ad278882
ArchiMate model	: ArchiSurance V3 - 2
Label	: Application Cooperation View
ArchiMate viewpoint	: Layered
Elements	: <ul style="list-style-type: none">• Bank System (ApplicationComponent)• CRM System (ApplicationComponent)

Every architecture element is represented by a wiki page

Page [Discussion](#) [Read](#) [Edit](#) [Edit source](#) [View history](#) [Opmerkingen](#) [☆](#) [More](#)

[ArchiMate models](#) > [ArchiSurance V3 - 2](#) > [ApplicationComponents](#) > CRM System

ARCHIMATE ELEMENT CRM SYSTEM		AVAILABLE ANALYSES	
Element type	: ApplicationComponent		<ul style="list-style-type: none">• Compare property values• Compare property values occurrence• Compare property values multi-dimensional• Element context diagram
Element id	: Id-d5c573ff-dd15-dceb-6fc5-45c55792f0fe		
ArchiMate model	: ArchiSurance V3 - 2		
Label	: CRM System		
Total cost of ownership	: 150000		
Number of users	: 35		
Lifecycle phase	: Operational		
Business value	: High		
Vendor	: Salesforce		
Status of technology	: Current		
ArchiMate views	: <ul style="list-style-type: none">• Application Cooperation View• Layered View		
Relationships	: <ul style="list-style-type: none">• CRM System realizes CIS (RealizationRelationship)• CRM System realizes Insurance Application Service (RealizationRelationship)• CRM System serves Web portal (ServingRelationship)• Claim Files Service serves CRM System (ServingRelationship)		



Categories: [ApplicationComponents](#) | [ArchiMate3.0](#) | [ArchiMateElements](#) | [ApplicationLayer](#) | [ActiveStructureAspect](#) | [ArchiMateModel](#)

Attributes are stored as semantic property values

Special page

Search ArchiMedes



Browse wiki

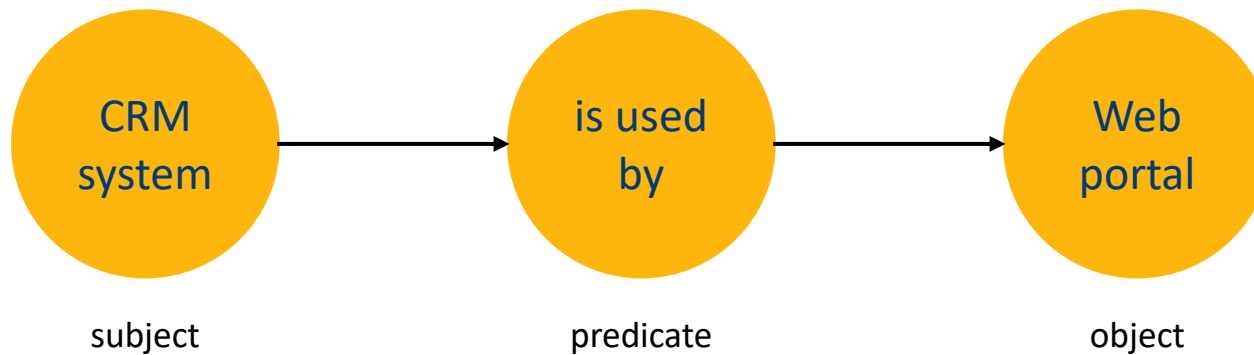
[RDF](#) [Help](#)

CRM System

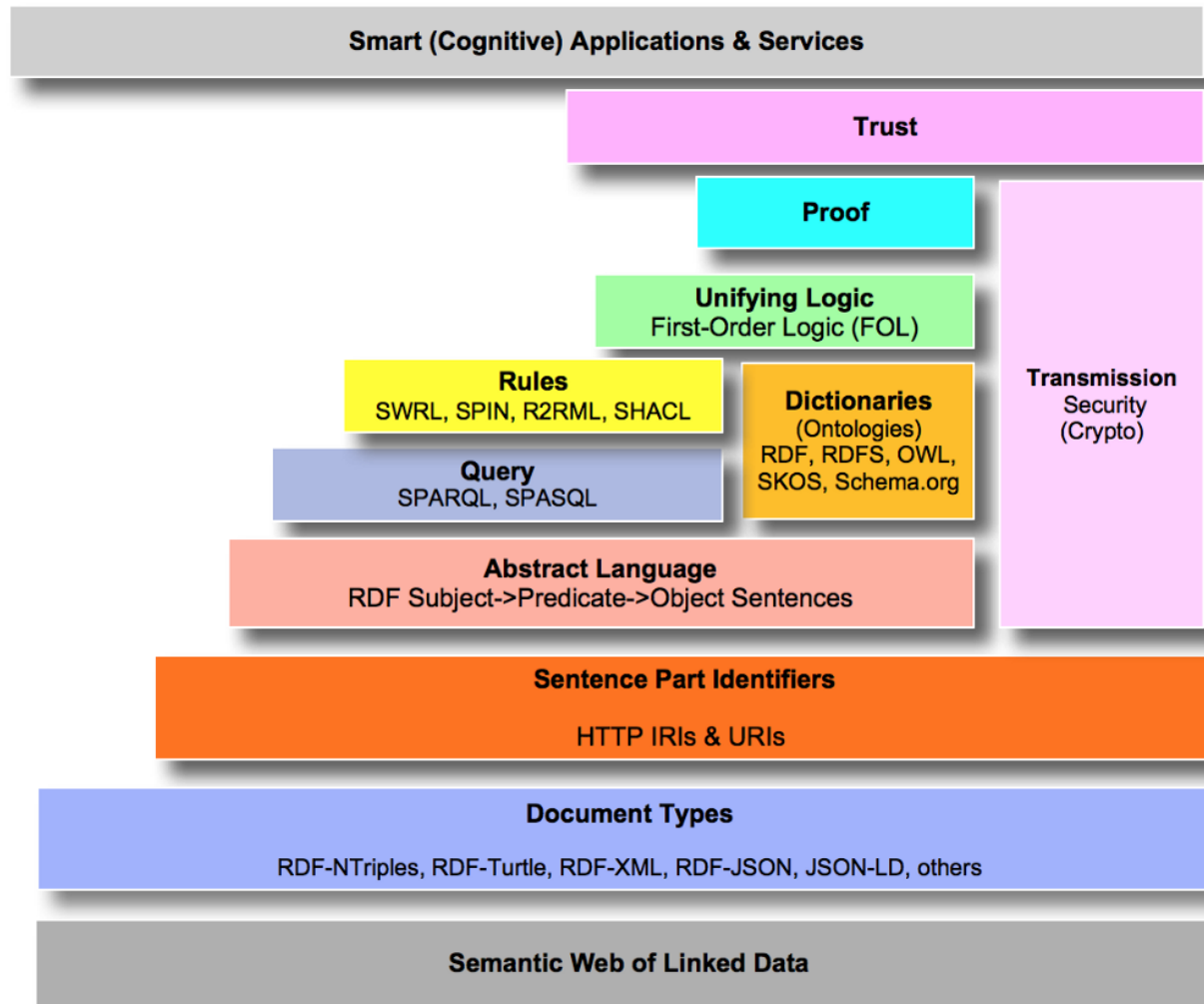
[Hide groups](#) | [Hide incoming properties](#)

ArchiMateVersion	3.0
Business value	High
CustomProperties	Total cost of ownership , Number of users , Lifecycle phase , Business value , Vendor and Status of technology
Elementtype	ApplicationComponent
GraphVizIcon	Bestand:ApplicationComponent icon.png
ImportSource	ArchiMate
Label	CRM System
LabelLanguages	en
Label en	CRM System
Lifecycle phase	Operational
Number of users	35
Occurs in model	ArchiSurance V3 - 2
Semantictitle	CRM System
Status of technology	Current
Total cost of ownership	150,000
Vendor	Salesforce
▼ Administrative properties	
Display title of	CRM System
Modification date	12:25:02, 30 May 2018
▼ Classification properties	
Category	ApplicationComponents , ArchiMate3.0 , ArchiMateElements , ActiveStructureAspect , ApplicationLayer , ArchiMateModel

About linked data



Linked data standards



FAIR linked data principles

Findable

The first step in (re)using data is to find them. [Metadata](#) and data should be easy to find for both humans and computers. [Machine-readable](#) metadata are essential for automatic [discovery](#) of datasets and services, so this is an essential component of the FAIRification process.

- F1. (Meta)data are assigned a globally unique and persistent identifier
- F2. Data are described with rich metadata (defined by R1 below)
- F3. Metadata clearly and explicitly include the identifier of the data they describe
- F4. (Meta)data are registered or indexed in a searchable resource

Accessible

Once the user finds the required data, they need to know how they can be accessed, possibly including [authentication](#) and [authorisation](#).

- A1. (Meta)data are retrievable by their identifier using a standardised communications protocol
 - A1.1 The protocol is open, free, and universally implementable
 - A1.2 The protocol allows for an authentication and authorisation procedure, where necessary
- A2. Metadata are accessible, even when the data are no longer available

Interoperable

The data usually need to be integrated with other data. In addition, the data need to interoperate with applications or workflows for [analysis](#), [storage](#), and [processing](#).

- I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (Meta)data use [vocabularies](#) that follow FAIR principles
- I3. (Meta)data include qualified references to other (meta)data

Reusable

The ultimate goal of FAIR is to optimise the reuse of data. To achieve this, metadata and data should be well-described so that they can be replicated and/or combined in different settings.

- R1. Meta(data) are richly described with a plurality of accurate and relevant attributes
 - R1.1. (Meta)data are released with a clear and accessible data usage license
 - R1.2. (Meta)data are associated with detailed provenance
 - R1.3. (Meta)data meet domain-relevant community standards

<https://www.go-fair.org/fair-principles/>

Why vocabularies?

“From Breda to New York is 3660 miles”

“From Breda to New York is 3180 miles”

“From Breda to New York is 1470 miles”

Why vocabularies?

All are true! Probably not what you expected

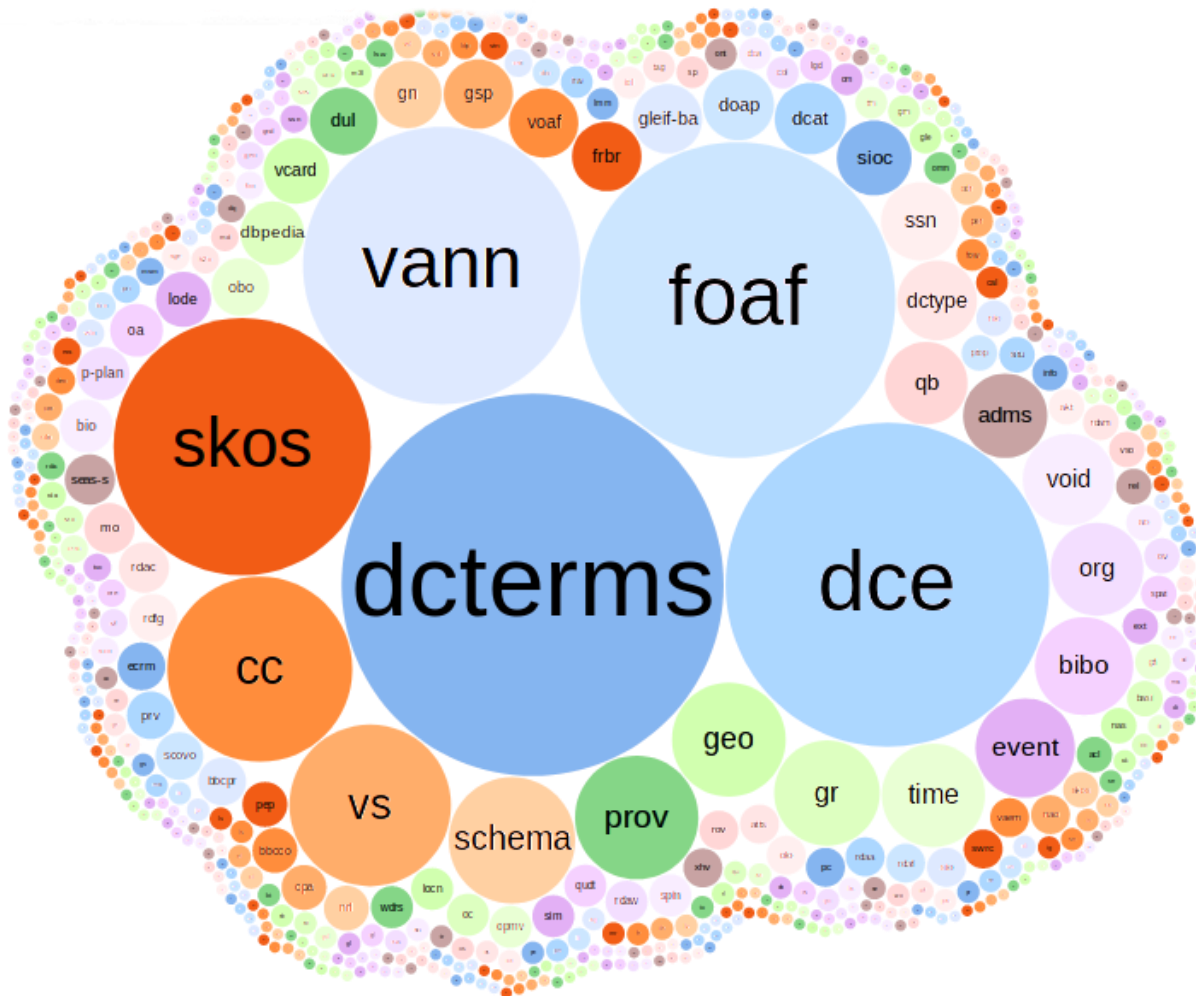
We didn't specify accurately

- New York, USA or New York, UA?
- English miles or nautical miles or Dutch or French or ...

"From Breda to New York is 3180 miles"



Linked data vocabularies provide common understanding



Why Architecture as linked data?

- ArchiMate definitions are abstract and leave a lot of room for interpretation
 - Specific Linked Data vocabularies offer more specific meanings
- It is important to publish architecture in an accessible way
 - Linked Data is specifically aimed at publishing in an accessible manner via the web
- ArchiMate requires specific knowledge of architectural concepts
 - Linked Data vocabularies use concepts that are more widely recognized and used
- ArchiMate models can only be used in architecture tools
 - There are many different tools for Linked Data
- ArchiMate standardizes only types, not properties
 - Specific Linked Data vocabularies also standardize the properties of types
- ArchiMate specifies and relates only architecture elements
 - Linked Data makes it possible to capture and connect all data elements

Extending ArchiMate with external vocabularies

ArchiMate specification:

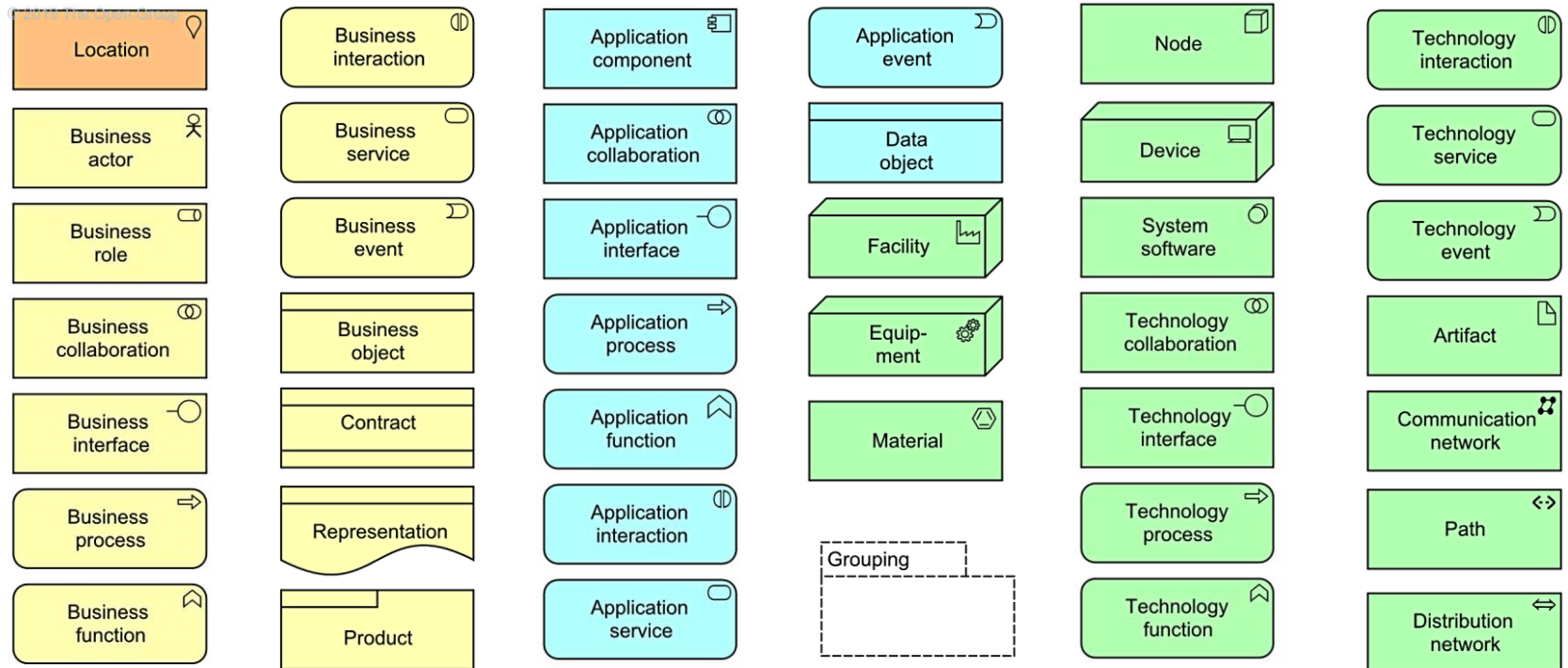
- “A data object represents data structured for automated processing.”
- “A data object should be a self-contained piece of information with a clear meaning to the business, not just to the application level. Typical examples of data objects are a customer record, a client database, or an insurance claim.”



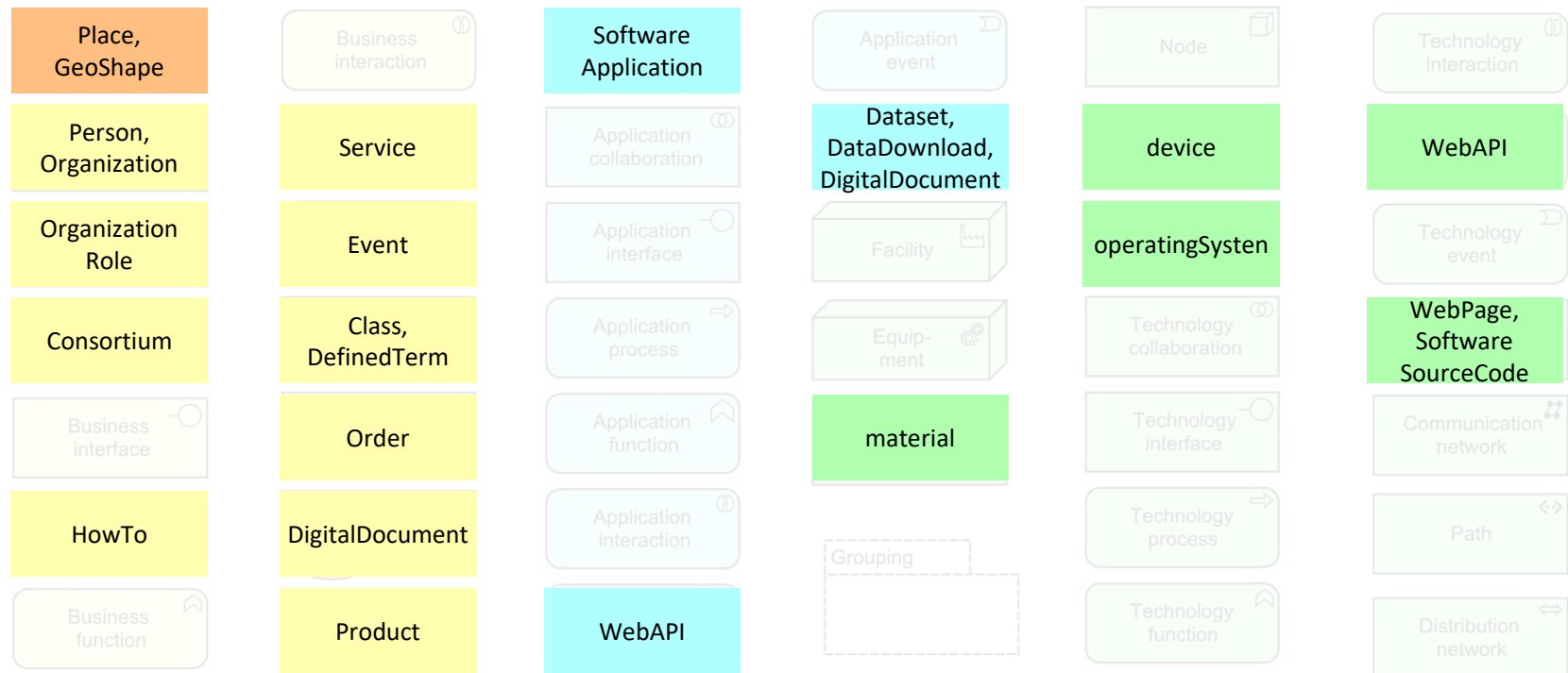
In ArchiMate you can apparently call a lot of different things a data object. What exactly you mean by that remains unclear.

If you are working with data, you would like to distinguish between more specific data objects such as record, database, document, dataset, distribution, catalog

ArchiMate elements



Schema.org types corresponding with ArchiMate elements



Schema.org semantics for software applications

Schema.org

DocsSchemasValidateAbout

SoftwareApplication

A Schema.org Type

Thing > CreativeWork > SoftwareApplication

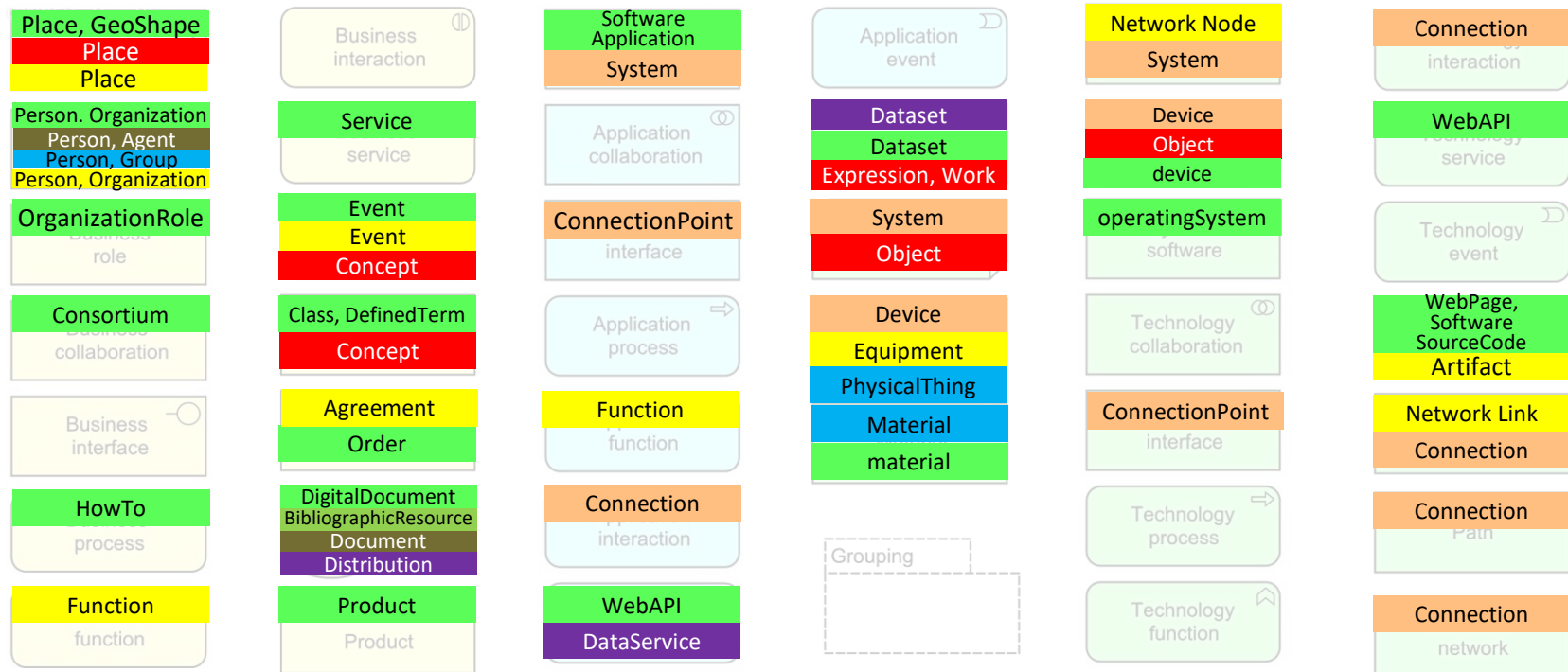
[more...]

A software application.

Property	Expected Type	Description
Properties from SoftwareApplication		
applicationCategory	Text or URL	Type of software application, e.g. 'Game, Multimedia'.
applicationSubCategory	Text or URL	Subcategory of the application, e.g. 'Arcade Game'.
applicationSuite	Text	The name of the application suite to which the application belongs (e.g. Excel belongs to Office).
availableOnDevice	Text	Device required to run the application. Used in cases where a specific make/model is required to run the application. Supersedes device .
countriesNotSupported	Text	Countries for which the application is not supported. You can also provide the two-letter ISO 3166-1 alpha-2 country code.
countriesSupported	Text	Countries for which the application is supported. You can also provide the two-letter ISO 3166-1 alpha-2 country code.
downloadUrl	URL	If the file can be downloaded, URL to download the binary.
featureList	Text or URL	Features or modules provided by this application (and possibly required by other applications).
fileSize	Text	Size of the application / package (e.g. 18MB). In the absence of a unit (MB, KB etc.), KB will be assumed.
installUrl	URL	URL at which the app may be installed, if different from the URL of the item.
memoryRequirements	Text or URL	Minimum memory requirements.
operatingSystem	Text	Operating systems supported (Windows 7, OSX 10.6, Android 1.6).
permissions	Text	Permission(s) required to run the app (for example, a mobile app may require full internet access or may run only on wifi).
processorRequirements	Text	Processor architecture required to run the application (e.g. IA64).

Source: <https://schema.org/SoftwareApplication>

ArchiMate elements expressed with popular vocabularies



Schema.org

SKOS

FRBR

FOAF

DCAT

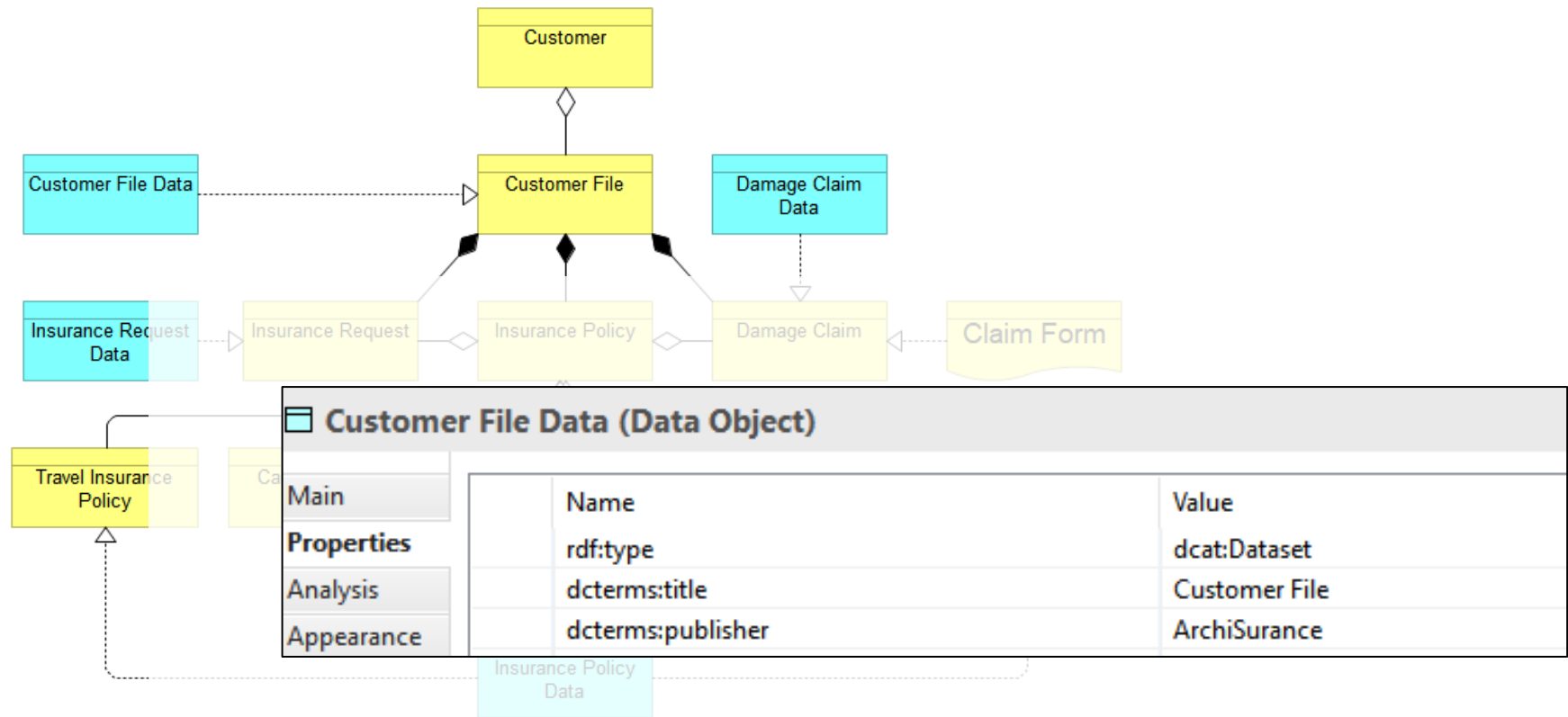
Dublin Core

CIDOC CRM

gist

SEAS

Use these to enrich ArchiMate with additional semantics



Transforming ArchiMate to RDF

- The Open Group (owner of ArchiMate) does not provide guidance
- But other initiatives exist

ArchiMate2RDF

<https://github.com/bp4mc2/archimate2rdf>

Linked Enterprises: deriving a hypermodel from ArchiMate

<https://www.linkedin.com/pulse/from-archimate-language-web-ontology-dr-nicolas-figay>

Experimentation on OWL derivations

<https://github.com/nfigay/archimate.owl>

OWL Exchange Plug-in for Archi

<https://github.com/archimatetool/OWLExchange>

How to export Archi(mate) file into RDF or OWL

<https://forum.archimatetool.com/index.php?topic=309.0>

Using RDF/OWL to analyse ArchiMate models

<https://groups.google.com/forum/#!topic/open-archimate-forum/poUR2BRqve0>

ArchiMate TTL

<https://github.com/ikm-group/ArchiMEO/blob/master/ARCHIMEO/ARCHIMATE/ArchiMate.ttl>

based on: <https://github.com/bp4mc2/archimate2rdf>

Starting from bp4mc2/archimate2rdf initiative

The screenshot displays the GitHub repository for `bp4mc2/archimate2rdf`. The repository is public and has 3 watchers, 3 forks, and 7 stars. The main branch is `master`, with 1 branch and 1 tag. The repository contains a commit history table and a README file.

File	Description	Time
<code>data</code>	Added custom properties in translator	4 years ago
<code>images</code>	Add some documentation about the mapping	4 years ago
<code>src/main</code>	Added option for custom stylesheet	4 years ago
<code>.gitignore</code>	Added json output	4 years ago
<code>README.md</code>	http to https	3 years ago
<code>archimate2rdf.sh</code>	Update for release	4 years ago
<code>create-ontology.sh</code>	Added custom properties in translator	4 years ago
<code>fetch-xsd.sh</code>	First version transformator	4 years ago
<code>pom.xml</code>	Added json output	4 years ago
<code>publish-ontology.sh</code>	Added json output	4 years ago

archimate2rdf

Translating the ArchiMate Model Exchange File Format to RDF

The Open Group has published the ArchiMate Model Exchange File format - a standard file format for the exchange of ArchiMate models between different tools. Resources can be found at: <https://www.opengroup.org/open-group-archimate-model-exchange-file-format>

The aim for this project, `archimate2rdf`, is to create a translator that fully translates a ArchiMate exchange file to a corresponding OWL ontology.

Releases 1

Release 0.1.0 **Latest**
on 14 Jan 2019

Packages

No packages published

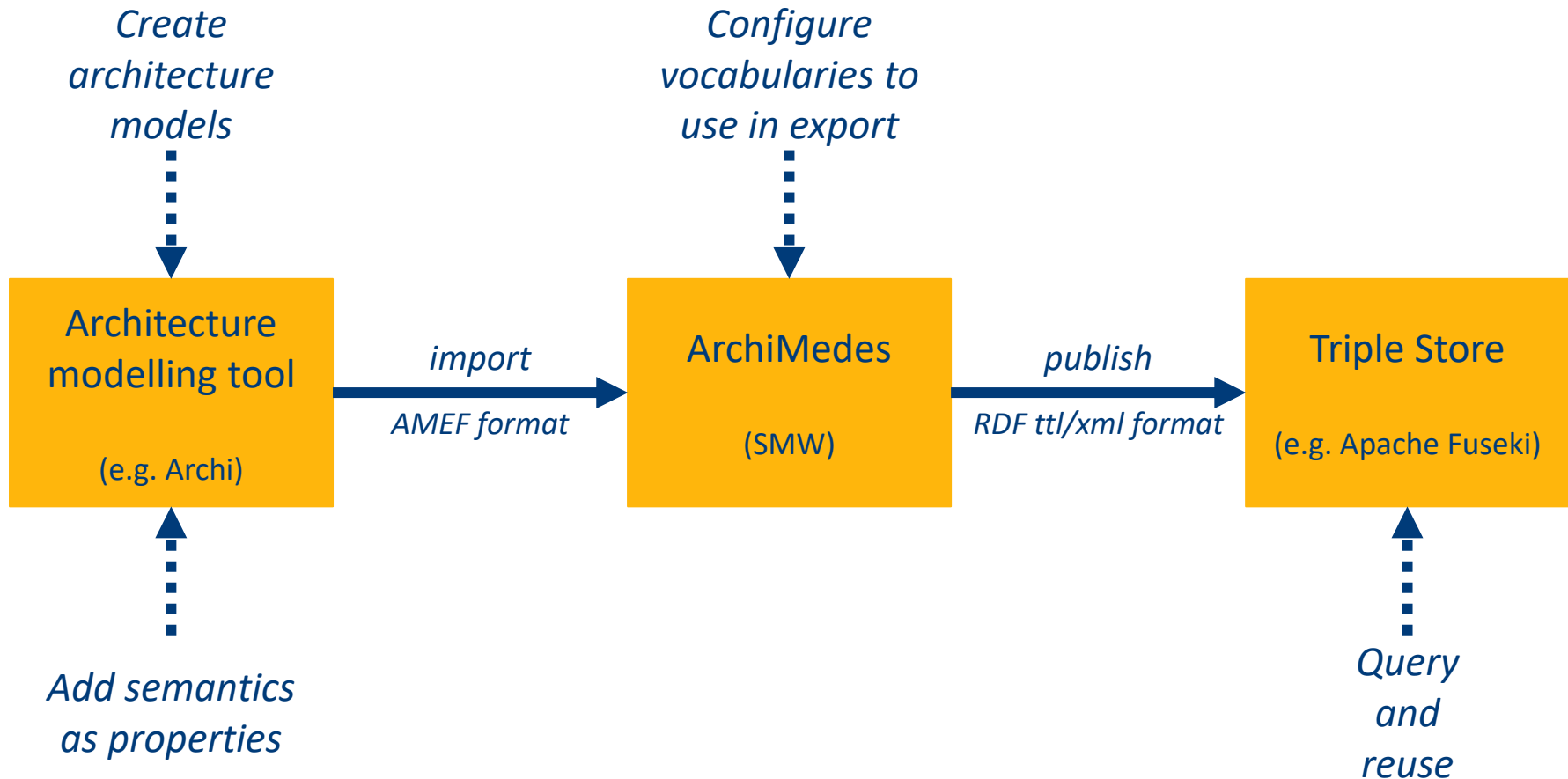
Languages

XSLT 58.9% Java 37.5% Shell 3.6%

We added some useful extensions to archimate2rdf

- Creation of URI's that are dereferenceable
- Promotion of Linked Data properties in ArchiMate (that start with "http" or contain a ":") to true RDF properties
- Inclusion of namespaces of a number of popular vocabularies, allowing shorthand reference in ArchiMate properties or their values
- The option to generate a SKOS enriched version of the model
- Translation of model metadata to a SKOS ConceptScheme
- The option to refer to view diagrams, defined by Archi, in SKOS output
- Translation of view diagrams to SKOS concepts
- Generation of SKOS Collections for all ArchiMate concepts in ArchiMate ontology
- Inclusion of ArchiMate definitions in ArchiMate ontology.ttl

Publish architecture model as linked data



Using SKOSMOS as “architecture linked data browser”

BegrippenXL

Woordenlijsten over Feedback Help | in English auf Deutsch

ArchiSurance thesaurus

Content taal Engels Zoeken

Alfabetisch

Hiërarchie

Groepen

- BIBIT
- BIBIT Server
- Board
- Business Cooperation View
- Business Function View
- Business Process View
- Business Product View
- Calculate Premium
- Calculate Risk
- Call center application
- Car
- Car Insurance Policy
- Check and Sign Contract
- CICS
- CIS
- Claim Data Management
- Claim Files Service
- Claim Form
- Claim InfoServ
- Claim Registration Service
- Claims Handling
- Claims Payment Service
- Client
- Client Satisfaction Goal
- Close Contract
- collaboration
- Collect Premium
- Component Principle
- Contracting
- Contracting
- Costs Goal
- Create Contract
- Create Policy
- CRM System
- Customer
- Customer
- Customer Data Access
- Customer data mutation Service
- Customer data mutation Service
- Customer File
- Customer File Data**
- Customer File Data Distribution
- Customer File Service
- Customer Information Service
- Customer Relations
- Customer's Bank
- Damage Claim
- Damage Claim Data
- Damage Occured
- Database Service
- DataSets view

VOORKEURSTERM

Customer File Data

TYPE

DataSet
DataObject

IS GERELATEERD AAN

Application Behaviour View
Application Structure View
DataSets view
Information Structure View

BEHOORT TOT GROEP

Data Object

UITGEVER

ArchiSurance

TITEL

Customer File

DISTRIBUTION

Customer File Data Distribution

REALIZATION

Customer File

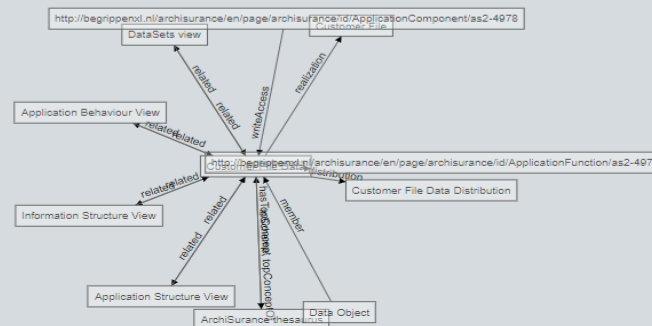
URI 1

<http://begrippenxl.nl/archisurance/en/page/archisurance/id/DataObject/as2-4990>

DOWNLOAD DIT CONCEPT:

RDF/XML TURTLE JSON-LD

Customer File Data



Including view diagrams

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ArchiSurance thesaurus Content taal Een taal Zoeken

Alfabetisch **Hiërarchie** Groepen

A B C D E F G H I L M N O P R
S T U V W

Accept
Actor Cooperation view
Admin Server
Application Behaviour View
Application Cooperation View
Application Structure View
Archimate View
Archisurance
Asset Management

VOORKEURSTERM

IS GERELATEERD AAN

- Claim Data Management
- Customer Data Access
- Customer File Data
- Damage Claim Data
- Home & Away Policy Administration
- Insurance Policy Data
- Policy Data Management
- Risk Assessment

BEHOORT TOT GROEP

DIAGRAM

The diagram shows a large blue box labeled 'Home & Away Policy Administration'. Inside this box, there are three smaller purple boxes: 'Risk Assessment', 'Claim Data Management', and 'Policy Data Management'. To the right of the blue box, there are three cyan boxes: 'Customer File Data', 'Damage Claim Data', and 'Insurance Policy Data'. Dashed arrows point from 'Customer Data Access' (a small purple box inside the blue box) to 'Customer File Data', from 'Claim Data Management' to 'Damage Claim Data', and from 'Policy Data Management' to 'Insurance Policy Data'.

URI <http://begrippenxl.nl/archisurance/en/page/as2-5560>

DOWNLOAD DIT CONCEPT: [RDF/XML](#) [TURTLE](#) [JSON-LD](#)

ZIE OOK <https://cdn.test.begrippenxl.nl/cdn.test.begrippenxl.nl/as2-5560.png>

Application Structure View

This diagram shows the 'Application Structure View' as a central concept. It is connected to 'Home & Away Policy Administration' via a 'related' relationship. It is also connected to 'Claim Data Management' via a 'related' relationship. A 'member' relationship points from 'View' to 'Application Structure View'. 'ArchiSurance thesaurus' is connected to 'Application Structure View' via a 'related' relationship. 'Damage Claim Data' is connected to 'Application Structure View' via a 'related' relationship. 'Application Structure View' is also connected to 'Application Cooperation View' via a 'related' relationship.

Including architecture model metadata according to DC

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ArchiSurance thesaurus Content taal Engels Zoeken

Alfabetisch **Hiërarchie** Groepen

A B C D E F G H I L M N O P R
S T U V W

Accept
Actor Cooperation view
Admin Server
Application Behaviour View
Application Cooperation View
Application Structure View
Archimate View
Archisurance
Asset Management

Woordenlijst informatie

TITEL	ArchiSurance thesaurus
ONDERWERP	Architecture, ArchiMate, Linked Data
BESCHRIJVING	A Linked Data publication of the ArchiMate ArchiSurance case, enriched to show the added value of Linked Data publication.
UITGEVER	ArchiXL B.V.
AUTEUR	Danny Greefhorst
RECHTEN	https://creativecommons.org/licenses/by/4.0/deed.nl
TAAL	English
DATUM	2022-07-15
FORMAAT	ArchiMate, SKOS
TYPE	http://www.w3.org/2004/02/skos/core#ConceptScheme
URI	http://begrippenxl.nl/archisurance/en/page/

Aantal bronnen per type

Type	Aantal
Begrip	139
• http://www.w3.org/ns/dcat#Rundefine	
ole	d
• Deprecated concept	0
Collectie	25

Aantal termen per taal

Taal	Voorkeurstermen	Alternatieve termen	Zoekterm
Engels	139	0	0

Any linked data viewer will do

ShowVoc Datasets Search Alignments

ArchiSurance

Metadata Data Sparql

Class Property Alignments

Class

- ◻ rdfs:Resource
 - ◻ owl:Thing
 - archimate:ApplicationCollaboration
 - archimate:ApplicationComponent
 - archimate:ApplicationEvent
 - archimate:ApplicationFunction
 - archimate:ApplicationInteraction
 - archimate:ApplicationInterface
 - archimate:ApplicationProcess
 - archimate:ApplicationService
 - archimate:Artifact
 - archimate:Assessment
 - archimate:BusinessActor
 - archimate:BusinessCollaboration
 - archimate:BusinessEvent
 - archimate:BusinessFunction
 - archimate:BusinessInteraction
 - archimate:BusinessInterface
 - archimate:BusinessObject
 - archimate:BusinessProcess
 - archimate:BusinessRole
 - archimate:BusinessService

Search

Customer File Data (en)

Customer File Data Distribution (en)

Damage Claim Data (en)

Insurance Policy Data (en)

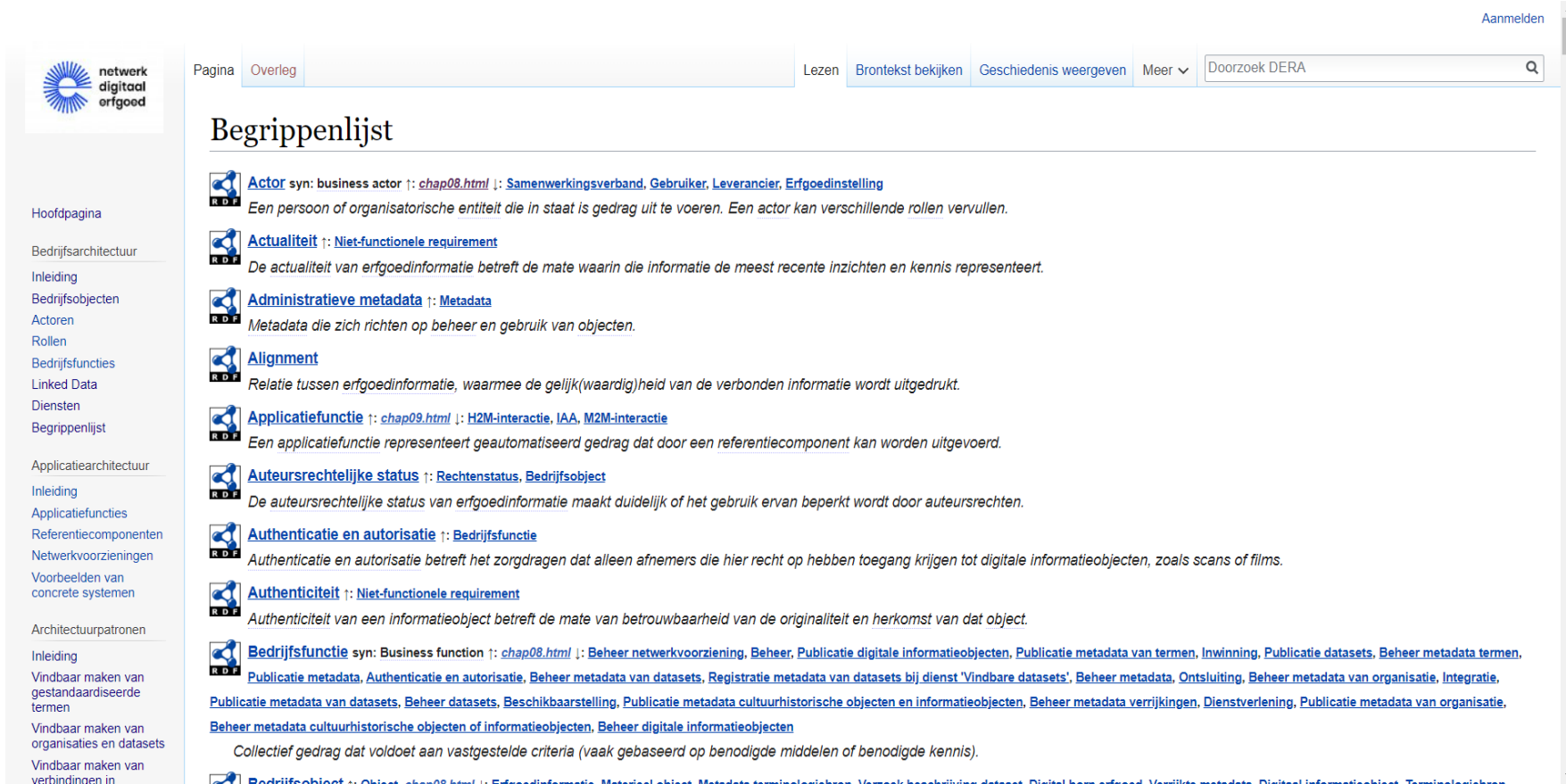
Insurance Request Data (en)

Search

Customer File (en) <http://begrippen.nl/archisurance/en/page/archisurance/id/DataObject/as2-4990>

Type	archimate:DataObject dcat:Dataset
Label	Customer File Data (en)
Realization	http://begrippen.nl/archisurance/en/page/archisurance/id/BusinessObject/as2-4943
Title	Customer File (en)
Publisher	ArchiSurance (en)
Distribution	http://begrippen.nl/archisurance/en/page/archisurance/id/DataObject/id-103816079aa6439e8de078a9451c7704

Real-life example: Dutch Digital Heritage Reference Architecture (DERA)



netwerk digitaal erfgoed

Pagina [Overleg](#) Lezen [Brontekst bekijken](#) [Geschiedenis weergeven](#) Meer

Begrippenlijst

- Actor** syn: business actor ↑: [chap08.html](#) ↓: [Samenwerkingsverband](#), [Gebruiker](#), [Leverancier](#), [Erfgoedinstelling](#)
Een persoon of organisatorische entiteit die in staat is gedrag uit te voeren. Een actor kan verschillende rollen vervullen.
- Actualiteit** ↑: [Niet-functionele requirement](#)
De actualiteit van erfgoed informatie betreft de mate waarin die informatie de meest recente inzichten en kennis representeert.
- Administratieve metadata** ↑: [Metadata](#)
Metadata die zich richten op beheer en gebruik van objecten.
- Alignment**
Relatie tussen erfgoed informatie, waarmee de gelijk(waardig)heid van de verbonden informatie wordt uitgedrukt.
- Applicatiefunctie** ↑: [chap09.html](#) ↓: [H2M-interactie](#), [IAA](#), [M2M-interactie](#)
Een applicatiefunctie representeert geautomatiseerd gedrag dat door een referentiecomponent kan worden uitgevoerd.
- Auteursrechtelijke status** ↑: [Rechtenstatus](#), [Bedrijfsobject](#)
De auteursrechtelijke status van erfgoed informatie maakt duidelijk of het gebruik ervan beperkt wordt door auteursrechten.
- Authenticatie en autorisatie** ↑: [Bedrijfsfunctie](#)
Authenticatie en autorisatie betreft het zorgdragen dat alleen afnemers die hier recht op hebben toegang krijgen tot digitale informatieobjecten, zoals scans of films.
- Authenticiteit** ↑: [Niet-functionele requirement](#)
Authenticiteit van een informatieobject betreft de mate van betrouwbaarheid van de originaliteit en herkomst van dat object.
- Bedrijfsfunctie** syn: Business function ↑: [chap08.html](#) ↓: [Beheer netwerkvoorziening](#), [Beheer](#), [Publicatie digitale informatieobjecten](#), [Publicatie metadata van termen](#), [Inwinning](#), [Publicatie datasets](#), [Beheer metadata termen](#), [Publicatie metadata](#), [Authenticatie en autorisatie](#), [Beheer metadata van datasets](#), [Registratie metadata van datasets bij dienst 'Vindbare datasets'](#), [Beheer metadata](#), [Ontsluiting](#), [Beheer metadata van organisatie](#), [Integratie](#), [Publicatie metadata van datasets](#), [Beheer datasets](#), [Beschikbaarstelling](#), [Publicatie metadata cultuurhistorische objecten en informatieobjecten](#), [Beheer metadata verwijkingen](#), [Dienstverlening](#), [Publicatie metadata van organisatie](#), [Beheer metadata cultuurhistorische objecten of informatieobjecten](#), [Beheer digitale informatieobjecten](#)
Collectief gedrag dat voldoet aan vastgestelde criteria (vaak gebaseerd op benodigde middelen of benodigde kennis).
- Bedrijfsobject** ↑: [Object](#), [chap08.html](#) ↓: [Erfgoed informatie](#), [Materiaal object](#), [Metadata terminologieën](#), [Verzoek beschikbare dataset](#), [Digitaal bestandsobject](#), [Verzamelde metadata](#), [Digitaal informatieobject](#), [Terminologieën](#)

<https://dera.netwerkdigitaal erfgoed.nl/index.php/Begrippenlijst>

Real-life example: Dutch Digital Heritage Reference Architecture (DERA)

```
-<rdf:RDF>
  -<owl:Ontology rdf:about="https://dera.netwerkdigitaalerfgoed.nl/index.php/Special:ExportRDF/Actor">
    <swivt:creationDate rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2022-10-25T11:51:53+02:00
    <owl:imports rdf:resource="http://semantic-mediawiki.org/swivt/1.0"/>
  </owl:Ontology>
  -<swivt:Subject rdf:about="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Actor">
    <rdf:type rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Category-3AElementen">
    <rdf:type rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Category-3ABegrippen">
    <rdf:type rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Category-3AToegestane">
    <rdfs:label>Actor</rdfs:label>
    <rdfs:isDefinedBy rdf:resource="https://dera.netwerkdigitaalerfgoed.nl/index.php/Special:ExportRDF/Actor"/>
    <swivt:page rdf:resource="https://dera.netwerkdigitaalerfgoed.nl/index.php/Actor"/>
    <swivt:wikiNamespace rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">0</swivt:wikiNamespace>
    <swivt:wikiPageContentLanguage rdf:datatype="http://www.w3.org/2001/XMLSchema#string">nl</swivt:wikiPageContentLanguage>
    <property:Altlabel rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Actor-23_Media">
    <skos:altLabel xml:lang="nl">business actors</skos:altLabel>
    <property:Breder_begrip rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/architectuur">
    <skos:broader rdf:resource="https://pubs.opengroup.org/architecture/archimate3-doc/chap08.html#_Toc10045368"/>
  -<skos:definition rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
    Een persoon of organisatorische entiteit die in staat is gedrag uit te voeren. Een actor kan verschillende rollen vervullen.
  </skos:definition>
  <property:GraphVizIcon rdf:resource="http://dera.netwerkdigitaalerfgoed.nl/index.php/Special:URIResolver/Bestanden">
  <skos:prefLabel rdf:datatype="http://www.w3.org/2001/XMLSchema#string">actor</skos:prefLabel>
  <property:Spellingvarianten rdf:datatype="http://www.w3.org/2001/XMLSchema#string">actoren</property:Spellingvarianten>
  <property:Spellingvarianten rdf:datatype="http://www.w3.org/2001/XMLSchema#string">business actors</property:Spellingvarianten>
  <property:Synoniem rdf:datatype="http://www.w3.org/2001/XMLSchema#string">business actor</property:Synoniem>
  <swivt:wikiPageModificationDate rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2022-09-14T11:51:53+02:00
```

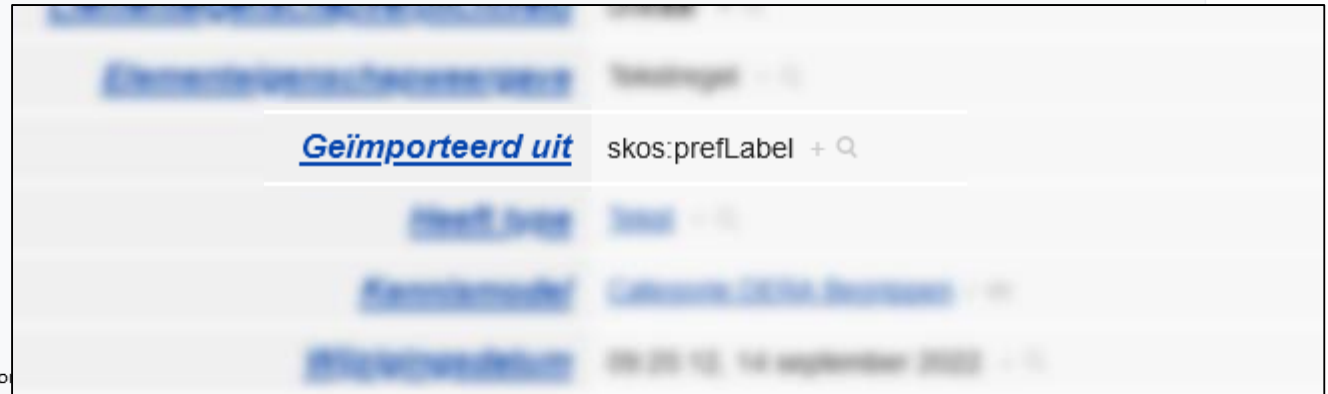
Real-life example: Dutch Digital Heritage Reference Architecture (DERA)

Bericht Overleg Lezen Brontekst bekijken Geschiedenis weergeven Meer ▾ Doorzoek DERA 🔍

MediaWiki:Smw import skos

<http://www.w3.org/2004/02/skos/core#%7C> Simple Knowledge Organization System (SKOS)

```
altLabel|Type:Monolingual text
broader|Type:Annotation URI
broaderTransitive|Type:Annotation URI
broadMatch|Type:Annotation URI
changeNote|Type:Text
closeMatch|Type:Annotation URI
Collection|Class
Concept|Class
ConceptScheme|Class
definition|Type:Text
editorialNote|Type:Text
exactMatch|Type:Annotation URI
example|Type:Text
hasTopConcept|Type:Page
hiddenLabel|Type:String
historyNote|Type:Text
inScheme|Type:Page
mappingRelation|Type:Page
member|Type:Page
memberList|Type:Page
narrower|Type:Annotation URI
narrowerTransitive|Type:Annotation URI
narrowMatch|Type:Annotation URI
notation|Type:Text
note|Type:Text
OrderedCollection|Class
prefLabel|Type:String
related|Type:Annotation URI
relatedMatch|Type:Annotation URI
scopeNote|Type:Text
semanticRelation|Type:Page
topConceptOf|Type:Page
```



Categorie: Imported vocabulary

Summary

- ArchiMate architecture models can be ‘semantically’ represented in a SemanticMediaWiki instance.
- Architecture models can be published from SMW to linked data (i.e. in a triple store) by using RDF export features. The resulting RDF can be aligned with external vocabularies.
- Linked data vocabularies such as schema.org can be used to
 - enrich ArchiMate models with additional properties,
 - help create common understanding of architecture concepts,
 - Support re-use of architecture knowledge in other (non-architecture) contexts.
- Publishing ArchiMate models as FAIR linked data is not only possible but also very useful.



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